

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-054427

(43)Date of publication of application : 26.02.1999

(51)Int.Cl.

H01L 21/027

G03F 7/30

(21)Application number : 09-222069

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(22)Date of filing : 05.08.1997

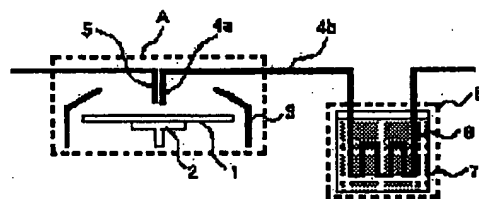
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(54) METHOD OF DEVELOPMENT IN PHOTOLITHOGRAPHIC PROCESS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a method which is capable of improving wettability of a wafer and suppressing micro bubbles and occurrence of residual stain on a wafer, during the photolithographic process of a semiconductor wafer.

SOLUTION: A wafer substrate 1, coated with a resist and exposed, is chucked by vacuum on a freely rotatable wafer chuck 2 set in a development bowl 3 and rotated slowly with a developing solution 8, discharged from a discharging nozzle 4a of the developing solution set above the wafer chuck, and a puddle of the developing solution 8 is formed on the wafer substrate 1. Low-frequency vibration is supplied to the chuck 2 of the wafer or an entire bowl and small vibration of low frequency is supplied as a result to the wafer. The wafer is developed, in its static condition or in its slow rotation condition, slightly vibrated with a low frequency during the development for a desirable time period. The wafer is given by the discharging nozzle 5 a rinse cleaning with a very small vibration during the rinse cleaning process, after the development and the residual water on the wafer has been shaken off by the centrifugal force caused by high-speed rotation after the rinse cleaning.



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[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

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